



State of Utah

Department of  
Environmental Quality

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DAQ-040-08

**MEMORANDUM**

**TO:** Air Quality Board

**THROUGH:** M. Cheryl Heying, Executive Secretary

**FROM:** Colleen Delaney, Environmental Scientist

**DATE:** May 23, 2008

**SUBJECT:** PROPOSE FOR PUBLIC COMMENT: Amend R307-150. Emission Inventories.

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**Sulfur Dioxide Milestone Inventory Requirements**

Utah's 2003 Regional Haze State Implementation Plan (SIP) contained sulfur dioxide (SO<sub>2</sub>) milestones that were based in part on 1999 SO<sub>2</sub> emissions from power plants that were reported to the federal acid rain program. In the middle of 1999, EPA changed the flow rate methodology that could be used to measure emissions for the acid rain program and in some cases the new flow rates could lead to a significant change in reported emissions. To ensure that real emission changes were being measured, R307-150 was modified to require power plants that were using the new flow rate methodology to adjust their emissions back to the old methodology for purposes of comparing regional SO<sub>2</sub> emissions to the regional SO<sub>2</sub> milestone.

In a separate action the Board is proposing changes to the Regional Haze SIP that will update the SO<sub>2</sub> milestones to reflect more current emission inventories (2006). This means that the provisions requiring an adjustment back to the old methodology are no longer needed. In addition, sources that make changes to their measurement methodology in the future should ensure that their emissions can be compared to their reported emission in 2006 rather than the earlier inventories of 1998 and 1999 as required by the current rule.

Staff Recommendation: DAQ staff recommends that the Board propose the attached revisions to R307-150 for public comment.

**R307. Environmental Quality, Air Quality.****R307-150. Emission Inventories.****R307-150-1. Purpose and General Requirements.**

(1) The purpose of R305-150 is:

(a) to establish by rule the time frame, pollutants, and information that sources must include in inventory submittals; and

(b) to establish consistent reporting requirements for stationary sources in Utah to determine whether sulfur dioxide emissions remain below the sulfur dioxide milestones established in the State Implementation Plan for Regional Haze, section XX.E.1.a, incorporated by reference in R307-110-28.

(2) The requirements of R307-150 replace any annual inventory reporting requirements in approval orders or operating permits issued prior to December 4, 2003.

(3) Emission inventories shall be submitted on or before ninety days following the effective date of this rule and thereafter on or before April 15 of each year following the calendar year for which an inventory is required. The inventory shall be submitted in a format specified by the Division of Air Quality following consultation with each source.

(4) The executive secretary may require at any time a full or partial year inventory upon reasonable notice to affected sources when it is determined that the inventory is necessary to develop a state implementation plan, to assess whether there is a threat to public health or safety or the environment, or to determine whether the source is in compliance with R307.

(5) Recordkeeping Requirements.

(a) Each owner or operator of a stationary source subject to this rule shall maintain a copy of the emission inventory submitted to the Division of Air Quality and records indicating how the information submitted in the inventory was determined, including any calculations, data, measurements, and estimates used. The records under R307-150-4 shall be kept for ten years. Other records shall be kept for a period of at least five years from the due date of each inventory.

(b) The owner or operator of the stationary source shall make these records available for inspection by any representative of the Division of Air Quality during normal business hours.

**R307-150-2. Definitions.**

The following additional definitions apply to R307-150.

"Acute Contaminant" means any noncarcinogenic air contaminant for which a threshold limit value - ceiling (TLV-C) has been adopted by the American Conference of Governmental Industrial Hygienists in its "Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices," 2003 edition.

"Carcinogenic Contaminant" means any air contaminant that is classified as a known human carcinogen (A1) or suspected human carcinogen (A2) by the American Conference of Governmental Industrial Hygienists in its "Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices," 2003 edition.

"Chronic Contaminant" means any noncarcinogenic air contaminant for which a threshold limit value - time weighted average (TLV-TWA) having no threshold limit value - ceiling (TLV-C) has been adopted by the American Conference of Governmental Industrial Hygienists in its "Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices," 2003 edition.

"Dioxins" and "Furans" mean total tetra- through octachlorinated dibenzo-p-dioxins and dibenzofurans.

"Emissions unit" means emissions unit as defined in R307-415-3.

"Large Major Source" means a major source that emits or has the potential to emit 2500 tons or more per year of oxides of sulfur, oxides of nitrogen, or carbon monoxide, or that emits or has the potential to emit 250 tons or more per year of PM10, PM2.5, volatile organic compounds, or ammonia.

"Lead" means elemental lead and the portion of its compounds measured as elemental lead.

"Major Source" means major source as defined in R307-415-3.

### **R307-150-3. Applicability.**

(1) R307-150-4 applies to all stationary sources with actual emissions of 100 tons or more per year of sulfur dioxide in calendar year 2000 or any subsequent year unless exempted in (a) below. Sources subject to R307-150-4 may be subject to other sections of R307-150.

(a) A stationary source that meets the requirements of R307-150-3(1) that has permanently ceased operation is exempt from the requirements of R307-150-4 for all years during which the source did not operate at any time during the year.

(b) Except as provided in (a) above, any source that meets the criteria of R307-150-3(1) and that emits less than 100 tons per year of sulfur dioxide in any subsequent year shall remain subject to the requirements of R307-150-4 until 2018 or until the first control period under the Western Backstop Sulfur Dioxide Trading Program as established in R307-250-12(1)(a), whichever is earlier.

(2) R307-150-5 applies to large major sources.

(3) R307-150-6 applies to:

(a) each major source that is not a large major source;

(b) each source with the potential to emit 5 tons or more per year of lead; and

(c) each source not included in (2) or (3)(a) or (3)(b) above that is located in Davis, Salt Lake, Utah, or Weber Counties and that has the potential to emit 25 tons or more per year of any combination of oxides of nitrogen, oxides of sulfur and PM10, or the potential to emit 10 tons or more per year of volatile organic compounds.

(4) R307-150-7 applies to Part 70 sources not included in (2) or (3) above.

### **R307-150-4. Sulfur Dioxide Milestone Inventory Requirements.**

(1) Annual Sulfur Dioxide Emission Report.

1 (a) Sources identified in R307-150-3(1) shall submit an  
2 annual inventory of sulfur dioxide emissions beginning with  
3 calendar year 2003 for all emissions units including fugitive  
4 emissions.

5 (b) The inventory shall include the rate and period of  
6 emissions, excess or breakdown emissions, startup and shut down  
7 emissions, the specific emissions unit that is the source of the  
8 air pollution, type and efficiency of the air pollution control  
9 equipment, percent of sulfur content in fuel and how the percent  
10 is calculated, and other information necessary to quantify  
11 operation and emissions and to evaluate pollution control  
12 efficiency. The emissions of a pollutant shall be calculated  
13 using the source's actual operating hours, production rates, and  
14 types of materials processed, stored, or combusted during the  
15 inventoried time period.

16 (2) Each source subject to R307-150-4 that is also subject  
17 to 40 CFR Part 75 reporting requirements shall submit a summary  
18 report of annual sulfur dioxide emissions that were reported to  
19 the Environmental Protection Agency under 40 CFR Part 75 in  
20 ~~[lieu]~~ lieu of the reporting requirements in (1) above.

21 (3) Changes in Emission Measurement Techniques. [

22 ~~—(a) Each source subject to R307-150-4 that is also subject~~  
23 ~~to 40 CFR Part 75 and that uses 40 CFR Part 60, Appendix A, Test~~  
24 ~~Methods 2F, 2G, or 2H to measure stack flow rate shall adjust~~  
25 ~~reported sulfur dioxide emissions to ensure that the reported~~  
26 ~~sulfur dioxide emissions are comparable to 1999 emissions. The~~  
27 ~~calculations that are used to make this adjustment shall be~~  
28 ~~included with the annual emission report. The adjustment shall be~~  
29 ~~calculated using one of the methods in (i) through (iii) below:~~

30 ~~—(i) Directly determine the difference in flow rate through a~~  
31 ~~side by side comparison of data collected with the new and old~~  
32 ~~flow reference methods required during a relative accuracy test~~  
33 ~~audit (RATA) test under 40 CFR Part 75.~~

34 ~~—(ii) Compare the annual average heat rate using heat input~~  
35 ~~data from the federal acid rain program (million Btu) and total~~  
36 ~~generation (megawatt (MW) Hrs) as reported to the federal Energy~~  
37 ~~Information Administration. The flow adjustment will be~~  
38 ~~calculated by using the following ratio: (Heat input/MW for first~~  
39 ~~full year of data using new flow rate method) divided by (Heat~~  
40 ~~input/MW for last full year of data using old flow rate method).~~

41 ~~—(iii) Compare the cubic feet per minute per MW before and~~  
42 ~~after the new flow reference method based on continuous emission~~  
43 ~~monitoring data submitted in the federal acid rain program, using~~  
44 ~~the following equation: (Standard cubic feet (SCF)/Unit of~~  
45 ~~generation for first full year of data using new flow rate method)~~  
46 ~~divided by (SCF/unit of generation for last full year of data~~  
47 ~~using old flow rate method).~~

48 ~~—(b)] Each source subject to R307-150-4 that uses a different~~  
49 ~~emission monitoring or calculation method than was used to report~~  
50 ~~their sulfur dioxide emissions in [1998]2006 under R307-150 or~~  
51 ~~[1999 under] 40 CFR Part 75 shall adjust their reported emissions~~  
52 ~~to be comparable to the emission monitoring or calculation method~~  
53 ~~that was used in 2006[1998 or 1999, as applicable]. The~~

calculations that are used to make this adjustment shall be included with the annual emission report.

**R307-150-5. Sources Identified in R307-150-3(2), Large Major Source Inventory Requirements.**

(1) Each large major source shall submit an emission inventory annually beginning with calendar year 2002. The inventory shall include PM10, PM2.5, oxides of sulfur, oxides of nitrogen, carbon monoxide, volatile organic compounds, and ammonia for all emissions units including fugitive emissions.

(2) For every third year beginning with 2005, the inventory shall also include all other chargeable pollutants and hazardous air pollutants not exempted in R307-150-8.

(3) For each pollutant specified in (1) or (2) above, the inventory shall include the rate and period of emissions, excess or breakdown emissions, startup and shut down emissions, the specific emissions unit that is the source of the air pollution, composition of air contaminant, type and efficiency of the air pollution control equipment, and other information necessary to quantify operation and emissions and to evaluate pollution control efficiency. The emissions of a pollutant shall be calculated using the source's actual operating hours, production rates, and types of materials processed, stored, or combusted during the inventoried time period.

**R307-150-6. Sources Identified in R307-150-3(3).**

(1) Each source identified in R307-150-3(3) shall submit an inventory every third year beginning with calendar year 2002 for all emissions units including fugitive emissions.

(a) The inventory shall include PM10, PM2.5, oxides of sulfur, oxides of nitrogen, carbon monoxide, volatile organic compounds, ammonia, other chargeable pollutants, and hazardous air pollutants not exempted in R307-150-8.

(b) For each pollutant, the inventory shall include the rate and period of emissions, excess or breakdown emissions, startup and shut down emissions, the specific emissions unit which is the source of the air pollution, composition of air contaminant, type and efficiency of the air pollution control equipment, and other information necessary to quantify operation and emissions and to evaluate pollution control efficiency. The emissions of a pollutant shall be calculated using the source's actual operating hours, production rates, and types of materials processed, stored, or combusted during the inventoried time period.

(2) Sources identified in R307-150-3(3) shall submit an inventory for each year after 2002 in which the total amount of PM10, oxides of sulfur, oxides of nitrogen, carbon monoxide, or volatile organic compounds increases or decreases by 40 tons or more per year from the most recently submitted inventory. For each pollutant, the inventory shall meet the requirements of R307-150-6(1)(a) and (b).

**R307-150-7. Sources Identified in R307-150-3(4), Other Part 70 Sources.**

(1) Sources identified in R307-150-3(4) shall submit the following emissions inventory every third year beginning with calendar year 2002 for all emission units including fugitive emissions.

(2) Sources identified in R307-150-3(4) shall submit an inventory for each year after 2002 in which the total amount of PM10, oxides of sulfur, oxides of nitrogen, carbon monoxide, or volatile organic compounds increases or decreases by 40 tons or more per year from the most recently submitted inventory.

(3) The emission inventory shall include individual pollutant totals of all chargeable pollutants not exempted in R307-150-8.

#### **R307-150-8. Exempted Hazardous Air Pollutants.**

(1) The following air pollutants are exempt from this rule if they are emitted in an amount less than that listed in Table 1.

TABLE 1

CONTAMINANT	Pounds/year
Arsenic	0.21
Benzene	33.90
Beryllium	0.04
Ethylene oxide	38.23
Formaldehyde	5.83

(2) Hazardous air pollutants, except for dioxins or furans, are exempt from being reported if they are emitted in an amount less than the smaller of the following:

(a) 500 pounds per year; or

(b) for acute contaminants, the applicable TLV-C expressed in milligrams per cubic meter and multiplied by 15.81 to obtain the pounds-per-year threshold; or

(c) for chronic contaminants, the applicable TLV-TWA expressed in milligrams per cubic meter and multiplied by 21.22 to obtain the pounds-per-year threshold; or

(d) for carcinogenic contaminants, the applicable TLV-C or TLV-TWA expressed in milligrams per cubic meter and multiplied by 7.07 to obtain the pounds-per-year threshold.

**KEY: air pollution, reports, inventories**

**Date of Enactment or Last Substantive Amendment:** ~~[December 31, 2003]~~**2008**

**Notice of Continuation:** February 9, 2004

**Authorizing, and Implemented or Interpreted Law:** 19-2-104(1)(c)